

08/422,360 04/17/95



**UNITED STATES DEPARTMENT OF COMMERCE
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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	MEDLEY	ATTORNEY DOCKET NO.
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EXAMINER
2104

ART UNIT PAPER NUMBER
3

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-19 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-19 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

1. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure. Claim 17 recites a clamping means, a sensing means, and a means for automatically deactivating the clamping means. These elements are not clearly disclosed in the specification. For example, what is the current limiting (clamping) means. What sort of sensor is being utilized?

2. Claims 17-19 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

3. Claims 5, 6, and 12-19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 5 and 6 "each phase line in the electrical system is connected to at least one nonlinear load" is indefinite. The preamble of claim 1 recites power supplied to at least one nonlinear load connected to a phase line, where the device is for eliminating currents in the neutral wire; therefore, the added limitation makes the claims indefinite. Do

the recited circuits for each phase include the neutral circuit claimed in 1? Claim 6 "wherein each of said electrical circuits is tuned to a third harmonic of the AC source" is indefinite, since this phrase does not appear to further limit the language of claim 2. Is the tuning of the circuit to a third harmonic of the AC source different than tuning the individual components of the device to a third harmonic frequency? Claims 12-16 and 19 are indefinite since the claimed limitations do not relate to the independently claimed filter of claim 11. These claims are given no patentable weight, since it appears that Applicant is claiming multiple inventions.

Skil
Indef.

Claim 15 is indefinite since the claimed elements lack structural cooperation between the claimed features of claim 11. Claim 17 is indefinite since claim 11 claims a complete circuit (the three components are 'connected in series' with the load), therefore, how can the parallel combination be in series with a means for clamping? Claim 17 "said parallel combination" lacks antecedent basis. Claim 18 "said first, said second, and said third device" lacks antecedent basis. Are these devices different than the first, second and third electrical components claimed in claim 11?

4. Claims 12-16 and 19 are rejected under 35 U.S.C. § 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claims 12-16 and 18 do not further limit the subject matter of

the independent claim 11. The claim 11 preamble recites a device for substantially eliminating harmonic currents in an electrical system having a nonlinear load and an AC source comprising, etc. The items claimed in the dependent claims which include a housing, an equipment rack panel member for storing the nonlinear load, the bracket member for mounting the device, a monitor saver board for a computer, a hospital grade isolation transformer, and a hospital utility cart, etc. have nothing to do with a device for substantially eliminating harmonic currents in an electrical system. These limitations fail to further limit the claimed invention in the independent claim, making the claims wholly indefinite. These are all separate inventions and have little, if anything, to do with the filter of claim 11.

5. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

6. Claims 1-11 are rejected under 35 U.S.C. § 103 as being unpatentable over the acknowledged prior art in view of Stacey et al. and Thanawala. The acknowledged prior art, beginning on page 1 lines 1 plus, discloses that there are known inventions that improve the power factor of power systems and suppress harmonic currents, specifically for nonlinear loads which include passive components for filtering. The prior art makes reference to the types of nonlinear loads (page 1 lines 17, plus) which cause adverse effects, such as single phase switching power supplies. The acknowledged prior art does not disclose a series connected RCL filter for suppressing harmonic currents.

Stacey et al. shows in figure 5 a series filter connected between the source and load which includes passive components (60 and 62), where the filter may be tuned to the third harmonic. Stacey et al. however, does not show a passive resistor in parallel with 60 and 62. Thanawala shows in figures 9, 11, 13, and 15 a passive resistor in parallel with a capacitor C_p and reactor L_d . It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the prior art with Stacey et al., since Stacey et al. teaches a series connected filter for suppressing harmonic currents, where the series suppressor may be tuned to the third harmonic.

It would have further been obvious to one of ordinary skill in the art at the time of the invention to modify the prior art and Stacey et al. with the passive resistor in parallel with a

passive capacitor and reactor as taught by Thanawala, since Thanawala teaches the combination of an RCL arrangement for filtering unwanted harmonic currents. It would have also been obvious to one of ordinary skill to employ the combination for each phase of a three phase system (plurality) in order to provide a balanced protection arrangement between a three phase source and load.

7. Claims 12-19 are rejected under 35 U.S.C. § 103 as being unpatentable over the acknowledged prior art in view of Stacey et al. and Thanawala as applied to claims 1-11 above, and further in view of Gilardi et al. Claims 1-11 were rejected as being obvious over the acknowledged prior art in view of Stacey et al.; however, none of the cited references disclose a housing for the filter device.

Gilardi et al. shows in figures 1 and 2 a housing for the filter arrangement of figure 5, where the components are enclosed for convenient transportation and connection to a load. Gilardi et al. further shows an isolation transformer in Fig. 6. It would have been obvious to one of ordinary skill in the art at the time of the invention to house the filter arrangement of the prior art and Stacey et al. in the Gilardi et al. enclosure and to add the Gilardi et al. transformer to the protection circuit, since doing so would provide a convenient transportable module for connecting directly to a load and for providing isolation between a source and a load.

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It is considered an engineering design choice to provide the claimed filter arrangement with any nonlinear load, since the filter would function to suppress harmonic currents for any nonlinear load connected. The Examiner takes official notice that current sensing and subsequently current limiting is well known to those skilled in the art and that it would have been an obvious modification to the Stacey et al. filter to detect a high current and limit the current in order to protect the load from excessive current.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sally Medley whose telephone number is (703) 305-3417.

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scm
June 15, 1995

A. D. Pellinen
A. D. PELLINEN
SUPERVISORY PATENT EXAMINER
ART UNIT 214